# CITY OF BRUNSWICK

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## POLICY FOR ACCEPTABLE INTERSECTION AND DRIVEWAY SIGHT DISTANCES

**Adopted April 27, 2004**

A policy to ensure uniform and consistent interpretations of sight distance measurements at intersections and driveways is needed to allow more effective review. Currently AASHTO requirements are inappropriate for most of Frederick County roads and city streets, and no definitive policy exists, other than AASHTO references. Therefore, the following criteria are to be applied in determining adequate sight distance at existing and future driveways and intersections.

1. Intersection criteria will be based on 85 percent of Case "B-2b and Cb" on AASHTO Figure 1X-40 (see attached).

    a. Criteria for intersections with existing streets and alleys will be measured against the 85$^{th}$ percentile of actual measured speed (not design or posted speed).

    b. Future (planned) intersections must meet the criteria, based upon staff-designated design speed (a minimum of 300 feet sight distance for local streets and alleys, as per draft design manual).

2. Driveway criteria will be based upon stopping sight distance criteria (Table III-1 attached).

The speeds to be used in determining required sight distance for driveways shall be the same as those used for intersection sight distance; i.e., existing 85$^{th}$ percentile measured speed.

Existing intersections or driveways not meeting this criteria will be immediately eligible for mitigation as determined by the City Engineer and the Department of Public Works.

Future intersections or driveways on existing streets and alleys not meeting this criteria will be required to establish another location or mitigate the sight distance problem, allowing the intersection/driveway to meet the criteria.

Attached is also a summary of the above criteria in table format with notes regarding how to measure the criteria.

| Design Speed (mph) | Assumed Speed for Condition (mph) | Brake Reaction Time (sec) | Brake Reaction Distance (ft) | Coefficient of Friction f | Braking Distance on Level (ft) | Stopping Sight Distance Computed (ft) | Stopping Sight Distance Rounded for Design (ft) |
|---|---|---|---|---|---|---|---|
| 20 | 20-20 | 2.5 | 73.3-73.3 | 0.40 | 33.3-33.3 | 106.7-106.7 | 125-125 |
| 25 | 24-25 | 2.5 | 88.0-91.7 | 0.38 | 50.5-54.8 | 138.5-146.5 | 150-150 |
| 30 | 28-30 | 2.5 | 102-7-110.0 | 0.35 | 74.7-85.7 | 177.3-195.7 | 200-200 |
| 35 | 32-35 | 2.5 | 117.3-128.3 | 0.34 | 100.4-120.1 | 217.7-248.4 | 225-250 |
| 40 | 36-40 | 2.5 | 132.0-146.7 | 0.32 | 135.0-166.7 | 267.0-313.3 | 275-325 |
| 45 | 40-45 | 2.5 | 146.7-165.0 | 0.31 | 172.0-217.7 | 318.7-382.7 | 325-400 |
| 50 | 44-50 | 2.5 | 161.3-183.3 | 0.30 | 215.1-277.8 | 376.4-461.1 | 400-475 |
| 55 | 48-55 | 2.5 | 176.0-201.7 | 0.30 | 256.0-336.1 | 432.0-537.8 | 450-550 |
| 60 | 52-60 | 2.5 | 190.7-220.0 | 0.29 | 310.8-413.8 | 501.5-633.8 | 525-650 |
| 65 | 55-65 | 2.5 | 201.7-238.3 | 0.29 | 347.7-485.6 | 549.4-724.0 | 550-725 |
| 70 | 58-70 | 2.5 | 212.7-256.7 | 0.28 | 400.5-583.3 | 613.1-840.0 | 625-850 |

**Table III-1. Stopping sight distance (wet pavements).**

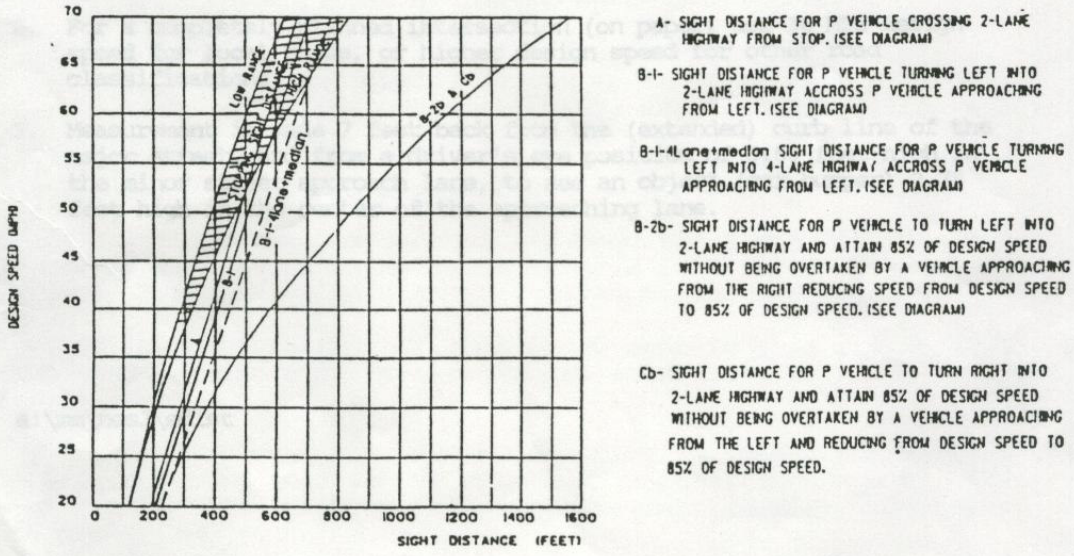


**Figure IX-40. Intersection sight distance at at-grade intersection (Case IIIB and Case IIIC).**

**DETERMINATION OF SAFE SIGHT DISTANCES**
**For Typical 90-Degree Intersections**
**Of Two 2-Lane Roads, the Minor Legs Being Stopped**

The following table covers Driveways and Intersections and assumes the worst case scenario; namely, making a right or left turn from stopped condition without being overtaken by an approaching vehicle, which is assumed to slow to 85% of approach speed.

| | ROUNDED SIGHT DISTANCE (FT.) | |
|---|---|---|
| **MPH** | **Driveways** | **Intersections** |
| 25 and less | 150 | 250 |
| 30 | 200 | 300 |
| 35 | 225 | 400 |
| 40 | 275 | 500 |
| 45 | 325 | 600 |
| 50 | 400 | 725 |
| 55 | 450 | 850 |

**Source: AASHTO 1990**
**(Driveways) Table III-1, p. 120 "Stopping S.D. for Wet Pavements"**
**(Intersections) Figure IX-40, 85% (rounded) of line B-2b & Cb**

1. For existing measurements and for proposed access to existing streets, use the measured $85^{th}$ percentile speeds of both directions of the major street. For example, downhill may be faster than uphill, etc., and may require a greater distance.

2. For a completely planned intersection (on paper), use 30 MPH design speed for local streets and alleys, or higher design speed for other street classifications.

3. Measurement is made 7 feet back from the (extended) curb line of the major street, and from a driver's eye position of 3.50 feet high in the minor street approach lane, to see an object (car bumper) 2.75 feet high in the center of the approaching lane.